

Exhibit B-1
Consultant Scope of Work
PSRC GPS Pricing Study
Phase 2: Implementation

Project No. VPPP-2002(029)

A. BACKGROUND AND GOALS

The project will use a statistically significant sample of motorists who will be charged (in the context of this experiment) for access to selected roadway facilities at particular time periods in the day. The demonstration will involve “before pricing” and “after pricing” data collection and will hold participants financially harmless by providing them with individualized travel budgets. In addition to the information it gains about the *price elasticity* of demand for trips (by type, location, and time of day), this project will test the application of Global Positioning System (GPS) technology to locate participating vehicles within time and space in order to develop the facility use data required to administer a system-wide variable facility pricing program.

This project will aid in the understanding of a regional, or system level, application of variable transportation pricing. The emphasis will be on creating or simulating an actual differential price experience for users of the transportation system in an effort to better understand user response to value pricing. The aims of this demonstration project are to implement an electronic road tolling pilot using GPS to enable driver’s responses to charges to be analyzed. The project will also allow the region to assess the price metering technology, and to identify a range of policy areas that will require further research and debate before full implementation would be considered. Specific project objectives include:

Familiarize the public and policy makers with road pricing. The demonstration project will provide a limited number of households with a direct experience with road pricing. Those motorists involved in the project will better understand how price relates to the benefits of their travel choices. Travel decisions in relation to price will become explicit. The technology involved in road pricing is unfamiliar to most people, experience with the technology will make it seem less strange. Since a sample of the region will participate, changes in their travel patterns will not affect the performance of the region’s transportation facilities. The profound benefits of road pricing in the form of reduced travel delay will need to be quantified and expressed in an understandable format concurrent with the administration of the project. Greater equity in financing will be able to be demonstrated directly through the demonstration.

Generate price response data for use in other analytical efforts. Data calculating user response to pricing will be collected from the sample of households participating in the demonstration. A properly developed sample stratified by income will allow the sample data to be used to develop elasticity estimates for broader analysis of transportation pricing. User response data and elasticity estimates can be incorporated into regional travel demand models as well as various revenue models used to forecast transportation revenues. Appropriately derived elasticity measures can aid in corridor transportation studies where pricing may be considered as a financing or management tool. The emphasis will be on generating short-run and mid-run elasticity measures (consistent with the timeframe of the project).

Develop an understanding of technological applications and standards. Specific vehicle positioning, communications, billing, and enforcement technologies will be developed for the administration of the project or will be defined as they would be needed for the broader actual application of a system-wide facility pricing program. All technical applications and their performance will be documented and evaluated for suitability within a broader implemented program.

Define more clearly policy issues to be addressed in an actual program design. The limited application of facility pricing in the demonstration project will allow a more defined set of policy issues to emerge, to be addressed in the design of a broader actual facility pricing program for potential future implementation at the corridor or regional scale. Generally, these policy issues encompass user privacy, payment security, enforcement, use of revenues, and other elements of program design and marketing.

In summary, this study will simulate the implementation of roadway pricing for a sample of volunteers, and will monitor their travel behavior (using GPS technology) before and after the selected highway links are priced.

The study has two phases.

- The Pre-Implementation Phase (Phase 1) of the project will establish technological and methodological specifications for the experiment, recruit participants, and do some testing of the monitoring technologies. The contracting for Phase 1 was completed in July 2004, and revised in a contract supplement in December 2004. Phase 1 will be completed at the end of February 2005. For completeness, information about Phase 1 is included in this scope of work, but the obligations of this contract supplement relate only to Phase 2.
- The Implementation Phase (Phase 2) will complete certain aspects of pre-experiment calibration (that must occur simultaneously with the final participant enrollment to meet the requirements of the schedule) and will then focus on (1) data collection: travel data from participants before and after pricing; and (2) statistical evaluation of the data.

The combined consultant services budget for this scope of work for both Phases, including the direct costs of recruitment, participant compensation for the installation of GPS equipment, and participant reimbursement for participating in the experiment (the endowment account, described later), is \$1,000,000. The budget for Phase 1 was \$365,000, and will be fully spent by the end of February 2005. The allocation of the remaining budget (\$635,000) is described below.

B. WORK ELEMENTS

The work elements described in this section of the agreement reflect a common understanding between all parties as to the general nature of the scope of work necessary to achieve project objectives. The innovative nature of the project, and the complex interaction between research design and other elements of the project, require that some degree of flexibility be maintained as work proceeds.

To this end, each major element contains a discussion section that outlines intentions and potential issues for resolution. This discussion is followed by a break down of the major element into subtasks and deliverables. These subtasks and deliverables are intended to illustrate a reasonable approach to element completion and reporting, but are not intended to

become a constraint where an alternative, and better, approach surfaces that will achieve the same project objectives.

Work element 1 is Project Administration, an element that relates to both Pre-Implementation (Phase 1) and the Implementation (Phase 2). Elements 2-5 are Pre-Implementation, are covered by a budget authorized in a previous contract, and are included in this scope for background and completeness only. Elements 6-9 are Implementation.

Thus, the scope of this contract is the remaining part of element 1 (project administration) and elements 6–9.

PHASE 1 and PHASE 2: PROJECT ADMINISTRATION

ELEMENT 1: PROJECT ADMINISTRATION

Provide all technical and administrative services as needed for Agreement completion; review all work performed; and coordinate budgeting and schedule development to assure that the contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

Ensure that the agreement requirements are met through completion of monthly (consistent to invoicing periods) status reports submitted to the Regional Council's project representative, and through regular communication with the Regional Council's project representative. The progress reports shall describe activities undertaken and accomplishments of each element during the period, milestones achieved, and any problems encountered in the performance of the work under this contract. The description of activities and accomplishments of each element during the period shall be in sufficient detail to provide a basis for payment of invoices. It is anticipated that consultants will make themselves available to periodically brief the Regional Council's Transportation Policy Board, or other committees established to help oversee project progress and management.

Part of the budget for this element was authorized and spent as part of a previous contract with the consultant for Phase 1 of this project. The budget attached to this exhibit shows the breakout between Phases 1 and 2.

PHASE 1: PRE-IMPLEMENTATION

NOTE: The scope of work for Phase 1 is presented for background only. Its tasks, deliverables, and budget are addressed in a previous consultant contract and are *not* part of this contract.

ELEMENT 2: DEVELOP ROADWAY PRICE STRUCTURE AND IMPLEMENTATION FRAMEWORK

DISCUSSION

Establish the study geography, determine facilities that require discrete spatial identification, and develop verifiably accurate base map. The extent of the study geography will have project cost and management implications as well as determine the appropriate use of the travel data that is generated. Possibly of greater importance, the number and class of roadway facilities for which verifiably accurate travel data needs to be collected will determine the extent of base mapping that is required, and will establish the architecture of the price structure and the methods for analyzing travel data once it is collected. The technical detail

of aligning GPS data with a digital map of facilities is a non-trivial issue that has significant equipment and cost ramifications. Commercially available GPS receivers and digital maps include various types and degrees of error that will need to be fully explored and addressed within this subtask. Ultimately, the spatial data matching solution will be required to demonstrate its adequacy prior to the launch of the Implementation Phase of the project.

Establish demonstration road charges by facility and time of day. The pilot study is intended to test a variable pricing structure that is cost-based, and that can be justified theoretically. Given current traffic levels on the Puget Sound network, the correct prices by time of day and by facility can be calculated from information on the volume-delay function of the facility and the value of time. The tools to perform these calculations already exist within PSRC's regional modeling system. Additionally, imbedded highway loops collect performance data on limited sections of the state highway system. This data can be used to aid in the price setting process. Calculations may be made on a road-segment basis, and then used in a simplified price structure to facilitate communication of the fee system. For example, different road segments may simply be identified as "red road" or "blue road" type segments, with all "red road" segments being priced at X cents per vehicle mile. Of primary concern are the general effects of the application of roadway pricing within travel corridors, with traffic diversion effects within corridors with differently priced facilities being a concern of lesser interest. Price structures will reflect this objective.

Similarly, simplification of the fee structure by time of day needs to be performed so as to reduce participant confusion. This is most likely going to result in a peak/near-peak/off-peak tripartite structure. At this time, we anticipate only enrolling private passenger vehicles, so that no differentiation by vehicle type will be necessary. The price structure that results from this analysis will be embedded in the in-vehicle meter software and informational materials provided to participants. This price structure has to be consistent both with the technical limitations of the Vehicle-Positioning-System (VPS)/Pricing technology and the underlying pricing principles that the project is testing.

SUBTASKS

2A. Establish study geography, facilities, digital base map, pricing structure and assignment

- 1) Determine the overall extent of the study geography
- 2) Determine class and specific roadway facilities to be included in price study, and, for which, data must be collected

2B. Establish the general price structure and assignment by facility segment and time period

- 1) Determine the general principles of the price structure to be employed in the study
- 2) Determine procedures for facility/segment/corridor/time-period price assignment

2C. Establish mapping procedures

- 1) Determine the procedures for the development of a digital base map, and the matching of satellite determined positional data and the digital map

Deliverables: A set of technical memoranda outlining the specific roadway pricing structure, study geography, and digital map development and data matching techniques that will be employed. Software products could include digital maps, data matching algorithms, and price calculation algorithms. To the extent that map development, data matching and pricing software will be developed in conjunction with the specific hardware that will be used in the demonstration these deliverables may become part of other elements.

ELEMENT 3: DETERMINE VPS/METERING TECHNOLOGY¹

DISCUSSION

Determine front-end (user) and back-end (office) technology requirements and develop the hardware and software components of vehicle based global positioning system . There are numerous approaches to implementing VPS-based road pricing. Some require no regular communications with the vehicle, and some transmit information from the vehicle to central data processing stations. These alternatives involve balancing considerations of privacy, implementation expense, data collection requirements, reliability, and compliance. Vehicles driven by participants in the project will be fitted with global positioning system (GPS) hardware and software.

Develop compliance features. It is important to the integrity of the study that the in-vehicle meter be operational at all times, and reasonably tamper proof. This can be achieved by building in connections to the vehicle ignition circuit so that failure to receive a moving GPS signal after some default period of vehicle operation indicates attempts to defeat the GPS antenna. In addition, the software can be programmed to detect impossible “leaps” between distant waypoints. Such features, coupled with embargoing of access to the travel budget for non-compliant participants should encourage compliance. Power management for the in-vehicle-units should also be addressed as a related element.

Determine Positional Data Storage and/or Transmission Protocol. During the demonstration project data can be stored in the vehicle for some period of time and/or transmitted to a central location for data storage and organization. Modern GPS antenna and receivers may have the capability to store several megabytes of data on removable memory cards. It is possible that the data used for analysis can be stored using a fairly coarse grid of “waypoints”, rather than high-resolution location data. This has the advantage of preserving greater user privacy during the course of the experiments at some sacrifice of analytical precision. Alternately this demonstration may store vehicle positional data in an in-vehicle computer; and/or data can be downloaded to a central location periodically during the demonstration project. In a later element the data storage and transmittal requirements of a broader implementation of a roadway pricing (as differentiated from requirements associated with this demonstration program) will be evaluated and documented as well.

Determine Price/User/Billing Interface. The participants in the project must understand the pricing structure that is applied to the transportation facility networks they will be using. For the purposes of the demonstration project we propose to use simple peak/off-peak non-dynamic price structure that can be easily represented in maps or other graphics. Because the pricing calculation will be performed in the vehicle, it can be resolved to the level of fractions of a mile even though trip detail at that resolution will not be stored. We do not anticipate using, but will consider, more complex alternatives. A more complex price structure, for example, would vary prices dynamically with the traffic conditions on the facilities. A dynamic price environment would require a system for assessing facility traffic conditions, a mechanism for converting traffic conditions to a price for entry to the facility and the communication of the price to the user in real time, and the implementation of a real time billing system that would allow multiple payment options (credit/debit). Such a sophisticated and integrated system would make sense at some large scale of implementation and when real revenues would more than offset implementation costs, but would probably not make sense for the purposes of this demonstration. And once again, the eventual requirements of a full implementation of a pricing program will be detailed as part of the project.

¹ The VPS/Metering system will consist of a combination of technology elements that allow for real time vehicle locating, data storage, processing and transmittal, and a user billing interface.

Determine Positional/Billing Data Management and Processing Approach. The back office requirements of the demonstration project must be developed in consort with the in-vehicle technology employed. Issues include the storage of positional data, the management of the data in such a manner to allow billing administration, facilitate research analysis defined in the outset of the project, and ensure user data privacy and security. The integration of the GPS data management with a geographic information system (GIS) will be essential. Standardized data reduction will be a necessary step in both billing management and research analysis. It is likely that custom software will need to be developed to handle the full array of billing functions.

Determine Enforcement Design and Technology Requirements. While enforcement will not be a component of a pricing demonstration that utilizes volunteer participants, the demonstration must address the enforcement issues that would arise under the actual administration of a full-fledged program. The design and cost of an enforcement program must be considered during the development of the comprehensive program design and technology that is eventually selected. Enforcement will be explicitly treated in the demonstration project through a documentation of specific enforcement issues that would be encountered and the development of a set of alternative proposals for the design of an enforcement program, complete with technical requirements, violation rate estimates and cost estimates.

Road Trial the Integrated Technology Applications. Once the user and back office technology has been determined and prototypes developed, the complete pricing system will undergo road trials to aid in the final development of technical applications that will implement the project. Road trials must also verify the positional accuracy of the GPS equipment, estimate errors, and verify the acceptable matching of GPS data with the roadway system base map developed under Element 1. Standards of acceptability for these road trials will be agreed upon by PSRC and the consultant team, and will reflect technical requirements identified under Element 1 and other elements of Element 2. Some initial equipment procurement will be part of this element and will need to be reflected in Phase 1 budget assumptions.

SUBTASKS

3A. Determine broad front-end (user) and back-end (office) technology requirements.

- 1) Determine technology parameters for evaluation
- 2) Define initial set of screening criteria for vendor selection

3B. Based on conclusions reached in Element 1, develop system requirements of Vehicle-Based Pricing System.

- 1) Initial review of candidate vendor systems
- 2) Develop compliance features.
- 3) Determine positional data storage and/or transmission protocol.
- 4) Determine price/user/billing interface and clearinghouse functions as well as who is responsible for managing endowment accounts and other financial activities..
- 5) Determine positional/billing data management and processing approach.
- 6) Determine enforcement design and technology requirements.
- 7) Determine other parameters essential for the successful implementation of a system demonstration.

3C. Conduct vendor/system evaluation and specification development

- 1) Summary evaluation of vendors/systems

- 2) Scoring of candidate vendors/systems
- 3) Presentation of viable candidate technologies. Vendors will be required to provide a demonstration of their technology (approximately one-day). The demonstration will be based largely on the functional specifications defined in Element 2B.
- 4) Final vendor specifications/selection

3D. Road trial of integrated technology applications.

Deliverables: Technical memoranda defining technology requirements, which will be used to provide the nature and scope of the technology element of the project. In addition, based on these requirements, an initial set of screening criteria for vendor selection will be defined. Technical memoranda describing a detailed concept of operations (including graphical schematics) for the systematic operation of technology system to support experimental design. A system requirements definition will be developed based on this concept of operations and be used to solicit vendors. Evaluation summaries of candidate vendors/systems, final assessment of most promising systems and justification for selection of final vendor/system. Technical memoranda describing the performance of the demonstration of vendor system to meet system requirements.

ELEMENT 4: DEVELOP EVALUATION METHODOLOGY AND PARTICIPANT SAMPLE REQUIREMENTS

DISCUSSION

A key aspect of this study is the opportunity it affords to study the reactions of a diverse set of individuals, at diverse locations in the system, to pricing. The information the experiment generates, and the public exposure to pricing it affords, needs to be collected and analyzed properly. This requires several, important subtasks.

Determine the experimental design of the pilot. From an evaluation standpoint, the pilot will be structured as an “experimental/control” type design. That is, the effects of the pricing policy will be studied by measuring the responses of an experimental group (participants) with a control group. The control group will either be the participants themselves, measured at a period prior to the experiment, or a statistically matched set of controls (non-participants) who are observed contemporaneously with the participants. The former design is referred to as a Participant Self-Control design, and the latter is a Non-Participant Control design. Because PSRC has already enrolled a group of 1,500+ households in a rolling panel survey, either design is administratively feasible through judicious use of panel members as participants or non-participant controls. The advantages and disadvantages of each approach will be evaluated in this subtask, as will be procedures for dealing with sample attrition. Cost of in-vehicle equipment will be a significant determinant of experimental design.

Determine experimental and control samples. The size and characteristics of the experimental and control samples will determine the precision with which the effects of the study can be measured in the aggregate and for any subgroups or trip types of interest. Preliminary sample design calculations suggest that a minimum of 400 households (and about 1000 automobiles) need to be enrolled in the pilot for the analysis to yield statistically robust measures of responses to pricing. This figure will be refined in this subtask, bringing to bear information from the PSRC rolling panel and other sources to anticipate sources of statistical variation. A rolling sample of participants may help achieve sampling size requirements at a lower cost for in-vehicle equipment, and can allow for methodological refinements as the implementation proceeds.

The sample will be drawn from either the population at large, or the PSRC rolling panel. Conventional randomization and stratification techniques should be used to select samples. The goal is to select participants and non-participants to (a) be statistically representative of the population of interest, (b) achieve desired measurement goals efficiently, and (c) provide the desired degree of statistical control.

The definition of the sample size and characteristics must allow the research outcomes to be realized. At a minimum, the sample will be income stratified to allow for the eventual calculation of income dependent price elasticity measures. Since the purchase and deployment of in-vehicle hardware will be a major cost component of the demonstration project the sample size should be the minimum required to ensure project objectives can be achieved.

Determine experiment time frame. It is anticipated that the experimental protocols will be in place for no less than a year, and quite possibly longer if a rolling sample methodology is employed. A longer time frame would afford the opportunity to observe the impact of pricing on long-run decisions (such as auto ownership and residential location). Since the more likely dimensions of impact are on route choice, mode choice, and trip frequency and schedule, however, the shorter time frame is appropriate. This subtask will result in specifications to guide the implementation phase of the project.

Refine evaluation methodology. The basic evaluation methodology should be determined in concert with sample frame development. The methodology will be different, for example, if a Participant Self-Control Design is used versus a Non-Participant Control design. In addition, we need to expand the effects measured in the experimental group to the population at large. The methodology also needs to be robust with respect to attrition, self-selection bias, and other sources of bias.

SUBTASKS

4A. Develop the experimental design consistent with issues outlined in the discussion section of this element item

- 1) Determine sample size and structure
- 2) Determine experimental control and sample management procedures

4B. Identify and refine participant sample frame

This work element will involve advanced statistical techniques and experimentation with actual household level data sets, or survey results to help in the detailed parameterization of the participant sample frame.

4C. Develop a recruitment and enrollment plan

4D. Develop a participant management plan

Deliverables: A set of technical memoranda detailing the sample requirements and experimental design. Specific sample frame specifications that allow for the enrollment of a stratified, or enriched, sample of regional households for participation in Phase 2. A recruitment plan that is consistent with the experimental design that results from subtask 4A, and will outline roles, responsibilities, and procedures for participant recruitment, enrolment, orientation, and preparation for the study implementation. A participant management plan that is consistent with the experimental design and outlines roles, responsibilities, and procedures for day-to-day management of the study participants, including: customer service,

equipment maintenance, participant retention efforts, and all other elements necessary to successfully achieve the study's participant objectives.

ELEMENT 5: PARTICIPANT ENROLLMENT AND COMMUNICATIONS

DISCUSSION

Central to the project are the volunteer participant households. Based on the experimental design and sampling plan, volunteer households will be recruited, enrolled, and oriented for the implementation phase of the project.

A key pilot project activity will be identifying how the public will be involved in the implementation of actual pricing programs. Value Pricing is seen as a new and unfamiliar concept, and an extensive public information component is widely accepted as critical to the implementation process. It is important that resources are directed into this area for a number of reasons. Public acceptance and understanding of a program will promote desirable changes in travel behavior and minimize the risk of undesirable responses such as extensive violation of the pricing program. Importantly, public acceptance is required for political support. The Regional Council's Transportation Policy Board will play an important role in providing project guidance, in particular relating to issues of policy and public communication.

In view of the importance of public outreach and consultation, a preliminary consultation/marketing/promotion/PR plan for the pilot will be outlined during Phase 1 discuss how to:

- Engage the public, and business in the discussion of Value Pricing
- Engage and widen the dialogue of transport funding and related policy issues identified above
- Explain what the demonstration consists of, why it is being performed, and how it works
- Explain all the work that would need to be undertaken before further decisions on any actual program could be made
- Ensure that accurate and balanced news stories (possibly through press releases and/or editorials) are disseminated and develop a framework/program to engage media at a very early stage, with periodic updates

SUBTASKS

A successful public relations element for this project will require work at the front-end of the project during Phase 1.

5A. Develop a general project description, and basic communication materials

5B. Develop a strategic public information plan

5C. Recruit and enroll participants

Potential participant recruits will be contacted to determine eligibility and willingness to participate. Contact will be made until a sufficient number of recruits have been secured to support the experimental design, anticipating some level of attrition. Once willing participant households are identified, they will be asked to sign a commitment letter and arrangements will be made to have the necessary equipment installed in their vehicle(s).

Deliverables: Introductory communication content will be developed describing the project, its objectives, and what it will and will not accomplish. The public information plan will guide project messaging, identify target audiences, and outline strategies to be conducted in Phase II. Public communications should highlight the “pilot” nature of the project and emphasize the need for better information before decisions can be made on implementation of value pricing system-wide. Endowment account parameters will be developed based upon the specifics of the toll model to be employed and the participant sample frame. A final set of deliverables is an enrolled set of participant households.

PHASE 2: IMPLEMENTATION

Phase 1 ends with the recruitment of participants (end of February 2005). Phase 2 includes everything that happens after participants are recruited:

- Confirming all aspects of the technology in the context of operating vehicles.
- Confirming all connections and protocols for data transfer
- Calibrating travel behavior
- Calculating the endowment account and tolls (and estimating pre-pricing price elasticities of demand)
- Managing the participants
- Managing other public information
- Monitoring the data; coordinating with the GPS provider
- Conducting the analysis
- Terminating the GPS part of the experiment
- Preparing reports.

ELEMENT 6: MANAGING PARTICIPANTS

DISCUSSION

On a day-to-day basis, the management of participant activities will relate to the handling of participants questions, technological problems, and other issues regarding the experiment. In addition, data collected from the in-vehicle meters will be reviewed on a regular basis to ensure continued compliance. These activities will require a dedicated engineering and administrative staff, and procedures for interacting with the participants. Enrollment of participants with internet access will facilitate these interactions.

SUBTASKS

6A. Operation of a Call Center

In addition to account access via the internet, participants in the experiment will have to have the ability to call by telephone and get quick service. The consultants will continue to maintain the call center set up in Phase I to handle this task. The TrafficChoices e-mail system set up in Phase I will continue as well.

6B. Orientation Sessions

Orientation sessions will be planned and conducted to prepare participating households for the implementation phase of the project. These sessions will be structured to provide the essential information for participants to understand how the project and its incentives work.

6C. Participant Management and Communication

Throughout the project, e-mail communication will be maintained as necessary to answer questions that arise, address procedural issues, and update participants on project progress. It is anticipated that each household will require at least one individual communication, and a percentage will likely have a number of questions. Questions or issues that may affect all participants will be answered and placed on the project website and e-mailed to households as appropriate.

ELEMENT 7: ESTIMATING AND MANAGING THE ENDOWMENT ACCOUNT

DISCUSSION

This work element involves the administration of the endowment account disbursements. The endowment account payouts are being administered by the consultant team and are a direct cost element in the contract (see budget below).

Estimating the requirements of the Endowment Account. The endowment account has to have sufficient funds at the end of the project to pay all participants an amount that will be agreed to (in writing between the participants and PSRC) after their travel behavior has been calibrated without pricing. The account must cover some fair remuneration (to be determined) for their participation (independent of their travel behavior), and a return to some participants of their account balances if they change their travel behavior in response to prices and do less traveling at congested places and times than their pre-pricing behavior (as calibrated) suggested they would. Several factors—including the pre-pricing calibration, the toll structure, the pre-experiment estimates of price elasticities, and the Phase 2 budget—affect this calculation.

Managing the Endowment Account. The account must be monitored and managed. The bulk of the account will not be paid out until the experiment is completed. Some participants, however, will exit the experiment for various reasons before it is completed. They will need to be paid. This task requires developing protocols for that payment and for all other activities and contingencies related to monitoring and managing the account, and then implementing those protocols during and at the end of the project. As part of its management of the endowment account, the contractor will monitor on-going travel behavior to re-estimate potential compensation to participants at the end of the project, and will adjust as necessary tolls or other project parameters to ensure that total payouts from the endowment accounts at the end of the project will not exceed the endowment account budget. Notwithstanding language signed by project participants regarding the uncertainty of the final payment and waiver of a right to sue regarding that compensation, the contractor is not responsible for expenses stemming from the errors or omissions of others, or other events over which the contractor has little control or for which it has little responsibility.

SUBTASKS

7A. Estimating the requirements Endowment Account

7B. Endowment Account Management Activities

Deliverables: Technical memoranda (1) discussing estimates of the endowment account; and (2) discussing a plan for monitoring and managing the account, and for paying out the account to participants. On-going monitoring and managing of the account, including final payments and accounting.

ELEMENT 8: DATA CONTROL, ANALYSIS, AND REPORTING

DISCUSSION

Sample integrity activities. Participant attrition will occur. It is estimated that approximately one in six Puget Sound households will move during the project life, causing either attrition or corruption of base-line data comparisons. In addition, the project will have certain controls in place against fraud and other behaviors that risk corrupting the project findings. Project staff will deal with these intermittent circumstances according to the statistical protocols of the study.

Project impact analysis. It is anticipated that the analysis of project impacts will be an on-going process. This is important both to detect early any problems with the conceptual design of the study, and also to detect compliance problems and other issues. In addition, participant behavior may evolve over time.

Final analysis of user group elasticity measures. Post project analysis will include analysis of before and after data to calculate price elasticity measures and other performance measures that are deemed appropriate. The analysis of individual participant behavior must then be generalized back to the region's population using statistical models that factor self-selection, attrition, seasonal factors, and income effects of the project. The combination of trip pattern analysis and the pre and post pricing GPS data may allow a more specific set of elasticity measures to be estimated based on trip purpose or other set of trip categories.

SUBTASKS

- 8A. Periodic data review and monitoring**
- 8B. Sample integrity/control**
- 8C. Endowment account monitoring**
- 8D. Data management, archiving, processing and compilation**
- 8E. Elasticity/value of time analysis, equity and privacy analysis**
- 8F. Reports and Presentations**

ELEMENT 9: PUBLIC COMMUNICATION IMPLEMENTATION

DISCUSSION

This work element continues the implementation of the communication plan developed under work element 5. Working in concert with the PSRC Communications office, the project team will brief key members of the media, develop a briefing paper, write and distribute a press release once all participants are being tolled, and respond to media as they request information about the project.

Deliverables: Briefing paper, media release and coordination with media to enable media reporting on project.

C. BUDGET

The budget described in this section of the agreement reflects a common understanding between all parties as to the general nature of the scope of work necessary to achieve project objectives. This general budget is intended to illustrate a reasonable approach to individual element completion, but is not intended to become a constraint where an alternative, and better, approach surfaces that will achieve the same objectives. The total project budget (Phases 1 and 2, Pre-Implementation and Implementation together) will not exceed the \$1,000,000 limit, unless a supplemental agreement is signed to provide additional budget allowance. The budget for Phase 1, Pre-Implementation, is \$365,000 and authorized in an earlier agreement and supplement. The budget for Phase 2 is \$635,000.

Project Element	Budget
Element 1: Administration Project Management	\$ 35,000
Element 2: Develop Price Structure and Implementation Framework	\$ 50,000
Element 3: Refine and Implement GPS Utilization Technology	\$ 60,000
Element 4: Develop Evaluation Methodology and Participant Sample Requirements	\$ 50,000
Element 5: Participant Enrollment / Communications	\$ 170,000
<i>Phase 1 Budget (subject of a previous contract)</i>	<i>\$ 365,000</i>
Element 1: Administration Project Management	\$ 40,000
Element 6: Participant Management	\$ 65,000
Element 7: Endowment Account and Account Administration	\$ 270,000
Element 8: Data Control, Analysis and Reporting	\$ 220,000
Element 9: Public Communications Implementation	\$ 40,000
<i>Phase 2 Budget (subject of this contract)</i>	<i>\$ 635,000</i>
TOTAL	\$ 1,000,000